

Application No.: 10/004706

Case No.: 56949US002

REMARKS

In response to the Office Action dated July 7, 2004, Applicants have amended independent claims 1, 12, 16, and 17 to clarify embodiments consistent with the present invention. Claims 1, 3-17, and 19-22 are pending. Reconsideration and allowance of all pending claims are respectfully requested.

A. Rejection of Claims 1, 3-8, 10, 12-17, 19-20, and 22.

The Examiner rejected claims 1, 3-8, 10, 12-17, 19-20, and 22 under 35 U.S.C. § 103 as having been obvious over U.S. Patent No. 6,558,219 ("Burroughes patent") and U.S. Patent No. 6,114,088 ("Wolk patent"). These rejections are respectfully traversed.

Independent claims 1, 12, 16, and 17 have been amended to recite the use of "an RF plasma treatment" to roughen the surface of the charge transfer layer. The present application as filed described this feature. "For example, an RF plasma formed with a noble gas (such as argon), oxygen (O₂), nitrogen (N₂) or combinations thereof can typically be used to roughen a surface without substantially chemically modifying or only partially oxidizing the surface. . . ." Specification, p. 6, lines 17-20.) An RF plasma treatment, for example, provides a sufficient amount of energy to generate the necessary roughening of the charge transfer layer surface.

The Burroughes patent was cited as inherently disclosing this feature. The Burroughes patent allegedly discloses "performing a plasma treatment on the surface of the charge transfer layer (thereby roughening it). . . ." (Office Action, p. 2. (emphasis added).) The cited disclosure of Burroughes teaches this plasma treatment as follows: "After the PEDOT:PSS layer has been deposited and dried it is exposed to reactive oxygen in the form of an oxygen plasma. The oxygen plasma is generated by a standard commercial microwave multimode plasma reactor such as a Cambridge Fluid Systems MRC100 (2.45 GHz). . . ." (Burroughes patent, col. 8, lines 24-29.)

However, even though Burroughes discloses use of a plasma treatment, that treatment does not inherently provide a teaching consistent with Applicants' claims. In particular, a microwave plasma treatment would not provide sufficient energy to roughen the surface, as required by Applicants' claimed inventions. Therefore, the Burroughes patent does not disclose or suggest this element. The Wolk patent was cited as disclosing thermal transfer and likewise

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does not disclose or suggest use of an RF plasma treatment to roughen the surface of a charge transfer layer.

Therefore, Applicants respectfully submit that the Burroughes and Wolk patents do not disclose or suggest the combination of elements recited in claims 1, 12, 16, and 17. Applicants respectfully submit that dependent claims 3-8, 10, 13-15, 19-20, and 22 are patentable for at least the reasons provided above for their respective base claims.

B. Rejection of Claims 1, 3-8, 10-17, 19-20, and 22.

The Examiner rejected claims 1, 3-8, 10-17, 19-20, and 22 as having been obvious over the Burroughes patent, the Wolk patent, and U.S. Patent No. 6,580,027 ("Forrest patent"). These rejections are respectfully traversed. Applicants respectfully submit that independent claims 1, 12, 16, and 17 are patentable over the Burroughes and Wolk patents for the reasons provided above. The Forrest patent was cited as disclosing the use of "mild plasma treatments," which "appear necessarily not to substantially chemically modify the surface of the PEDOT layer." (Office Action, p. 4; see Forrest patent, col. 9, lines 35-36 (reciting that "[t]he layers may be treated, for example, with a mild argon or oxygen plasma").)

The mild plasma treatments would also necessarily not have sufficient energy to roughen the surface of that layer. Therefore, Applicants respectfully submit that the Burroughes, Wolk, and Forrest patents do not disclose or suggest the combination of elements recited in claims 1, 12, 16, and 17. Applicants respectfully submit that dependent claims 3-8, 10-11, 13-15, 19-20, and 22 are patentable for at least the reasons provided above for their respective base claims.

C. Rejection of Claim 9.

The Examiner rejected claim 9 as having been obvious over the Burroughes patent, the Wolk patent, and U.S. Patent No. 4,994,529, and those patents combined with the Forrest patent. This rejection is respectfully traversed. Applicants respectfully submit that dependent claim 9 is patentable for at least the reasons provided above for its base claim.

D. Rejection of Claim 21.

The Examiner rejected claim 21 as having been obvious over the Burroughes patent, the Wolk patent, and U.S. Patent No. 5,902,688, and those patents combined with the Forrest patent.

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This rejection is respectfully traversed. Applicants respectfully submit that dependent claim 21 is patentable for at least the reasons provided above for its base claim.

E. Conclusion.

Applicants submit that all pending claims are in condition for allowance and respectfully request early and favorable reconsideration of the same. To the extent that the Examiner has any continuing questions or concerns regarding the claims, he is encouraged to directly contact Applicants' undersigned representative to discuss the same.

Respectfully submitted,

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Date

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